

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1-24. (Canceled)

25. (Previously Presented) An apparatus for automatically forming a composite article by assembling first and second workpieces thermoformed in a common plastic sheet comprising a plurality of the first and second workpieces, the apparatus comprising:

5 a trimmer for individually trimming at least one of the first workpieces from the plastic sheet; and

a carrier moveable between a first position, where the carrier picks up one of the trimmed first workpieces, and a second position, where the carrier assembles the trimmed first workpiece to one of the second workpieces in the plastic sheet.

26. (Previously Presented) The apparatus according to claim 25 wherein the carrier moves directly between the first and second positions eliminating the need to temporarily store the trimmed first workpiece prior to assembly to the one of the second workpieces.

27. (Previously Presented) The apparatus according to claim 26 wherein the carrier assembles the trimmed first workpiece to the one of the second workpieces by a press-fit coupling.

28. (Previously Presented) The apparatus according to claim 92 wherein the carrier comprises a suction device to pick the first workpiece as it is trimmed from the sheet and to hold the trimmed first workpiece as it is assembled to the second workpiece.

29. (Previously Presented) The apparatus according to claim 28 wherein the carrier comprises a force reliever to control the amount of force applied by the carrier to the second workpiece during the assembly of the trimmed first workpiece to the second workpiece.

30. (Original) The apparatus according to claim 29 wherein the carrier comprises a reciprocating arm on an end of which the suction device is mounted.

31. (Original) The apparatus according to claim 30 wherein the force reliever mounts the suction device to the end of the arm.

32. (Original) The apparatus according to claim 31 wherein the reciprocating arm reciprocates between a pick-up position that corresponds to the first position, and an assembly position that corresponds to the second position.

33. (Previously Presented) The apparatus according to claim 32 wherein the reciprocating arm reciprocates between the pick-up and assembly positions in a direction that is either parallel or transverse to the machine direction as defined by the movement of the plastic sheet through the apparatus.

34. (Original) The apparatus according to claim 33 wherein the trimmer comprises a first punch and die set for trimming the first workpiece from the plastic sheet.

35. (Previously Presented) The apparatus according to claim 34 wherein the die comprises an inlet opening in which the punch is received to trim the first workpiece from the plastic sheet when the plastic sheet is positioned between the punch and die, and an outlet opening into which the reciprocating arm extends to pick up the trimmed first workpiece when the reciprocating arm is in the pick-up position.

36. (Previously Presented) The apparatus according to claim 35 wherein the carrier further comprises a moveable platform carrying the reciprocating arm and which is moveable

between a first position where the reciprocating arm is positioned within the die outlet, and a second position where the reciprocating arm is positioned outside of the die outlet.

37. (Original) The apparatus according to claim 36 wherein there are multiple reciprocating arms, with at least one of the arms at the pick-up position when another of the arms is at the assembly position.

38. (Original) The apparatus according to claim 37 and further comprising a second trimmer having a second punch and die set for trimming the assembled first and second workpieces from the plastic sheet.

39. (Previously Presented) The apparatus according to claim 25 wherein there are multiple carriers, with each carrier picking up a different trimmed first workpiece in the first position and assembling it to a different second workpiece.

40. (Previously Presented) The apparatus according to claim 25 wherein the carrier assembles the trimmed first workpiece to the second workpiece by a press-fit coupling.

41. (Original) The apparatus according to claim 40 wherein the press-fit coupling is a snap-fit coupling.

42. (Previously Presented) The apparatus according to claim 25 wherein the carrier assembles the trimmed first workpiece to the second workpiece by an adhesive coupling.

43. (Previously Presented) The apparatus according to claim 25 wherein the carrier assembles the trimmed first workpiece to the second workpiece by an ultrasonic weld.

44-82. (Canceled)

83. (Previously Presented) The automated manufacturing line according to claim 90 wherein the assembly station comprises a carrier moveable relative to the alternating one of rows and columns between a first position, where it picks the trimmed first thermoformed workpiece,

and a second position, where it assembles the trimmed first thermoformed workpiece to the second thermoformed workpiece.

84. (Canceled)

85. (Previously Presented) The apparatus according to claim 91 wherein the carrier is moveable relative to the alternating one of rows and columns between the first and second positions.

86-87. (Canceled)

88. (Previously Presented) The apparatus according to claim 25 wherein the sheet comprises a portion of a web of plastic.

89. (Previously Presented) The apparatus according to claim 25 wherein the sheet comprises opposing front and rear sides, and the trimmer trims the first thermoformed workpiece from the front side, and the carrier picks up the one of the trimmed first workpieces from the front side and assembles the one of the trimmed first workpieces to the one of the second workpieces on the front side.

90. (Previously Presented) An automated manufacturing line for making a composite article from first and second thermoformed workpieces by automatically assembling the first thermoformed workpiece to the second thermoformed workpiece, comprising:

a thermoforming station for thermoforming the first and second thermoformed workpieces in a plastic sheet, wherein the plastic sheet comprises alternating one of rows and columns of the first thermoformed workpieces and the second thermoformed workpieces;

a trim station for trimming at least the first thermoformed workpiece from the plastic sheet; and

an assembly station for assembling the trimmed first thermoformed workpiece onto the second thermoformed workpiece to form the composite article.

91. (Previously Presented) An apparatus for automatically forming a composite article by assembling first and second workpieces thermoformed in a common plastic sheet comprising a plurality of the first and second workpieces, the apparatus comprising:

a trimmer for individually trimming at least one of the first workpieces from the plastic sheet, wherein the plastic sheet comprises alternating one of rows and columns of the first workpieces and the second workpieces; and

a carrier moveable between a first position, where the carrier picks up one of the trimmed first workpieces, and a second position, where the carrier assembles the trimmed first workpiece to one of the second workpieces in the plastic sheet.

92. (Previously Presented) An apparatus for automatically forming a composite article by assembling first and second workpieces thermoformed in a common plastic sheet comprising a plurality of the first and second workpieces, the apparatus comprising:

a trimmer for trimming at least one of the first workpieces from the plastic sheet; and

a carrier moveable between a first position, where the carrier picks up one of the trimmed first workpieces, and a second position, where the carrier assembles the trimmed first workpiece to one of the second workpieces in the plastic sheet by a press-fit coupling, wherein the carrier is movable directly between the first and second positions eliminating the need to temporarily store the trimmed first workpiece prior to assembly to the one of the second workpieces.

93. (New) An automated manufacturing line for making a composite article from first and second thermoformed workpieces by automatically assembling the first thermoformed workpiece to the second thermoformed workpiece, comprising:

a thermoforming station for thermoforming the first and second thermoformed workpieces in a plastic sheet;

a trim station for individually trimming at least the first thermoformed workpiece from the plastic sheet; and

an assembly station for assembling the first and second thermoformed workpieces by press-fitting the first and second thermoformed workpieces.

94. (New) The automated manufacturing line according to claim 93 wherein the press-fitting of the trimmed first thermoformed workpiece and the second thermoformed workpiece is a snap-fit.

95. (New) An automated manufacturing line for making a composite article from first and second thermoformed workpieces by automatically assembling the first thermoformed workpiece to the second thermoformed workpiece, comprising:

- 5 a thermoforming station for thermoforming the first and second thermoformed workpieces in a plastic sheet;
- a trim station for individually trimming at least the first thermoformed workpiece from the plastic sheet; and
- an assembly station for assembling the trimmed first thermoformed workpiece onto the second thermoformed workpiece by an adhesive coupling to form the composite article.

96. (New) An automated manufacturing line for making a composite article from first and second thermoformed workpieces by automatically assembling the first thermoformed workpiece to the second thermoformed workpiece, comprising:

- 5 a thermoforming station for thermoforming the first and second thermoformed workpieces in a plastic sheet;
- a trim station for individually trimming at least the first thermoformed workpiece from the plastic sheet; and
- an assembly station for assembling the trimmed first thermoformed workpiece onto the second thermoformed workpiece to form the composite article comprising a carrier
- 10 moveable between a first position, where it picks the trimmed first thermoformed workpiece, and a second position, where it assembles the trimmed first thermoformed workpiece to the second thermoformed workpiece.

97. (New) The automated manufacturing line according to claim 96 wherein the carrier comprises a suction device to pick the trimmed first thermoformed workpiece as it is

trimmed from the sheet and hold the trimmed first thermoformed workpiece as it is carried to the second thermoformed workpiece.

98. (New) The automated manufacturing line according to claim 97 wherein the carrier comprises a force reliever to control the amount of force applied by the carrier to the trimmed first thermoformed workpiece and the second thermoformed workpiece as they are assembled.

99. (New) The automated manufacturing line according to claim 98 wherein the carrier comprises a reciprocating arm on an end of which the suction device is mounted.

100. (New) The automated manufacturing line according to claim 99 wherein the force reliever mounts the suction device to the end of the arm.

101. (New) The automated manufacturing line according to claim 99 wherein the reciprocating arm reciprocates between a pick-up position that corresponds to the first position, and an assembly position that corresponds to the second position.

102. (New) The automated manufacturing line according to claim 101 wherein the reciprocating arm reciprocates between the pick-up and assembly positions in a direction that is either parallel or transverse to the machine direction as defined by the movement of the plastic sheet through the assembly station.

103. (New) The automated manufacturing line according to claim 101 wherein the trim station comprises a first punch and die set for trimming the first thermoformed workpiece from the plastic sheet.

104. (New) The automated manufacturing line according to claim 103 wherein the die comprises an inlet opening in which the punch is received to trim the first thermoformed workpiece from the plastic sheet when the plastic sheet is positioned between the punch and die,

and an outlet opening into which the reciprocating arm extends to pick up the trimmed first
5 thermoformed workpiece when the reciprocating arm is in the pick-up position.

105. (New) The automated manufacturing line according to claim 104 wherein the
assembly station further comprises a moveable platform carrying the reciprocating arm and
which is moveable between a first position where the reciprocating arm is positioned within the
die outlet, and a second position where the reciprocating arm is positioned outside of the die
5 outlet.

106. (New) The automated manufacturing line according to claim 105 wherein there
are multiple reciprocating arms, with at least one of the arms at the pick-up position when
another of the arms is at the assembly position providing for the contemporaneous pick-up of a
trimmed first thermoformed workpiece while a previously pick-up trimmed first thermoformed
5 workpiece is being assembled to the second thermoformed workpiece.

107. (New) The automated manufacturing line according to claim 106 wherein the trim
station further comprises a second punch and die set for trimming the assembled first and second
thermoformed workpieces from the plastic sheet.

108. (New) The automated manufacturing line according to claim 106 wherein there
are multiple carriers.

109. (New) The automated manufacturing line according to claim 108 wherein the
multiple carriers are arranged in at least two sets, wherein when one of the at least two sets is in
the first position, the other of the at least two sets is in the second position providing for the
contemporaneous pick-up of a first trimmed thermoformed workpiece while a previously pick-up
5 trimmed first thermoformed workpiece is being assembled to the second thermoformed
workpiece.

110. (New) The automated manufacturing line according to claim 96 wherein the
movement of the carriers between the first and second positions is either generally parallel or
transverse to the machine direction as defined by the movement of the plastic sheet through the
assembly station.

111. (New) The automated manufacturing line according to claim 96 wherein the trim station comprises a first punch and die set for trimming the first thermoformed workpiece from the plastic sheet.

112. (New) The automated manufacturing line according to claim 111 wherein the die comprises an inlet opening in which the punch is received to trim the first thermoformed workpiece from the plastic sheet when the plastic sheet is positioned between the punch and die, and an outlet opening into which the carrier extends to pick up the trimmed first thermoformed
5 workpiece.

113. (New) The automated manufacturing line according to claim 111 wherein the trim station further comprises a second punch and die set for trimming the assembled first and second thermoformed workpieces from the plastic sheet.

114. (New) An automated manufacturing line for making a composite article from first and second thermoformed workpieces by automatically assembling the first thermoformed workpiece to the second thermoformed workpiece, comprising:

a thermoforming station for thermoforming the first and second thermoformed
5 workpieces in a plastic sheet;

a trim station for individually trimming at least the first thermoformed workpiece from the plastic sheet; and

an assembly station for assembling the trimmed first thermoformed workpiece onto the second thermoformed workpiece to form the composite article by moving the trimmed
10 first thermoformed workpiece directly from the trim station onto the second thermoformed workpiece without temporarily storing the trimmed first thermoformed workpiece prior to assembly to the second thermoformed workpiece.

115. (New) An automated manufacturing line for making a composite article from first and second thermoformed workpieces by automatically assembling the first thermoformed workpiece to the second thermoformed workpiece, comprising:

- a thermoforming station for thermoforming the first and second thermoformed
5 workpieces in a plastic sheet comprising a portion of a web of plastic;
a trim station for individually trimming at least the first thermoformed workpiece
from the plastic sheet; and
an assembly station for assembling the trimmed first thermoformed workpiece
onto the second thermoformed workpiece to form the composite article.

116. (New) An automated manufacturing line for making a composite article from first
and second thermoformed workpieces by automatically assembling the first thermoformed
workpiece to the second thermoformed workpiece, comprising:

- a thermoforming station for thermoforming the first and second thermoformed
5 workpieces in a plastic sheet;
a trim station for individually trimming at least the first thermoformed workpiece
from the plastic sheet; and
an assembly station for assembling the trimmed first thermoformed workpiece
onto the second thermoformed workpiece to form the composite article;

- 10 wherein the sheet comprises opposing front and rear sides, and the trim station
trims the first thermoformed workpiece from the front side, and the assembly station assembles
the trimmed thermoformed workpiece onto the second thermoformed workpiece on the front
side.

117. (New) An automated manufacturing line for making a recloseable lid assembly
comprising a lid with a drink opening and a closure tab for selectively closing the drink opening,
comprising:

- a thermoforming station for thermoforming the lid and the closure tab in a plastic
5 sheet;
a trim station for trimming at least one of the lid and closure tab from the plastic
sheet; and

an assembly station for assembling the trimmed one of the at least one of the lid and closure tab to the other of the lid and closure tab to form the recloseable lid assembly.

118. (New) The automated manufacturing line according to claim 117 wherein the assembly station assembles the lid and closure tab by press-fitting together the trimmed one of the lid and closure tab onto the other of the lid and closure tab.

119. (New) The automated manufacturing line according to claim 118 wherein the press-fitting of the lid and closure tab is a snap-fit.

120. (New) The automated manufacturing line according to claim 117 wherein the assembly station assembles the lid and closure tab by an adhesive coupling.

121. (New) The automated manufacturing line according to claim 117 wherein the assembly station assembles the lid and closure tab by an ultrasonic weld.

122. (New) The automated manufacturing line according to claim 117 wherein the assembly station comprises a carrier moveable between a first position, where it picks the trimmed one of the lid and closure tab, and a second position, where it assembles the trimmed one of the lid and closure tab to the other of the one of the lid and closure tab.

123. (New) The automated manufacturing line according to claim 122 wherein the carrier comprises a suction device to pick the trimmed one of the lid and closure tab as it is trimmed from the sheet and hold the trimmed one of the lid and closure tab as it is carried to the other of the lid and the closure tab.

124. (New) The automated manufacturing line according to claim 123 wherein the carrier comprises a force reliever to control the amount of force applied by the carrier to the lid and closure tab as they are assembled.

125. (New) The automated manufacturing line according to claim 124 wherein the carrier comprises a reciprocating arm on an end of which the suction device is mounted.

126. (New) The automated manufacturing line according to claim 125 wherein the force reliever mounts the suction device to the end of the arm.

127. (New) The automated manufacturing line according to claim 125 wherein the reciprocating arm reciprocates between a pick-up position that corresponds to the first position, and an assembly position that corresponds to the second position.

128. (New) The automated manufacturing line according to claim 127 wherein the reciprocating arm reciprocates between the pick-up and assembly positions in a direction that is either parallel or transverse to the machine direction as defined by the movement of the plastic sheet through the assembly station.

129. (New) The automated manufacturing line according to claim 127 wherein the trim station comprises a first punch and die set for trimming the trimmed one of the lid and closure tab from the plastic sheet.

130. (New) The automated manufacturing line according to claim 129 wherein the die comprises an inlet opening in which the punch is received to trim the trimmed one of the lid and closure tab from the plastic sheet when the plastic sheet is positioned between the punch and die, and an outlet opening into which the reciprocating arm extends to pick up the trimmed first
5 thermoformed workpiece when the reciprocating arm is in the pick-up position.

131. (New) The automated manufacturing line according to claim 130 wherein the assembly station further comprises a moveable platform carrying the reciprocating arm and which is moveable between a first position where the reciprocating arm is positioned within the die outlet, and a second position where the reciprocating arm is positioned outside of the die
5 outlet.

132. (New) The automated manufacturing line according to claim 131 wherein there are multiple reciprocating arms, with at least one of the arms at the pick-up position when another of the arms is at the assembly position providing for the contemporaneous pick-up of a

5 trimmed one of the lid an closure tab while a previously picked-up trimmed one of the lid and closure tab is being assembled to the other of the lid and closure tab.

133. (New) The automated manufacturing line according to claim 132 wherein the trim station further comprises a second punch and die set for trimming the assembled lid and closure tab from the plastic sheet.

134. (New) The automated manufacturing line according to claim 122 wherein there are multiple carriers.

135. (New) The automated manufacturing line according to claim 134 wherein the multiple carriers are arranged in at least two sets, wherein when one of the at least two sets is in the first position, the other of the at least two sets is in the second position.

136. (New) The automated manufacturing line according to claim 122 wherein the movement of the carriers between the first and second positions is either generally parallel or transverse to the machine direction as defined by the movement of the plastic sheet through the assembly station.

137. (New) The automated manufacturing line according to claim 122 wherein the trim station comprises a first punch and die set for trimming the first thermoformed workpiece from the plastic sheet.

5 138. (New) The automated manufacturing line according to claim 137 wherein the die comprises an inlet opening in which the punch is received to trim the one of the lid and closure tab from the plastic sheet when the plastic sheet is positioned between the punch and die, and an outlet opening into which the carrier extends to pick up the trimmed one of the lid and closure tab.

139. (New) The automated manufacturing line according to claim 137 wherein the trim station further comprises a second punch and die set for trimming the assembled lid and closure tab from the plastic sheet.

140. (New) The automated manufacturing line according to claim 117 wherein the assembly station moves the trimmed one of the lid and closure tab directly from the trim station onto the other of the lid and closure tab without temporarily storing the trimmed one of lid and closure tab prior to assembly.